

SEQUENCE LISTING

<110> The University of British Columbia

<120> Regulation of Embryonic Transcription in Plants

<130> 4810-58741

<140> PCT/CA 00/00907

<141> 2000-08-04

<150> US 60/147,133

<151> 1999-08-04

<160> 23

<170> PatentIn version 3.0

<210> 1

<211> 12

<212> DNA

<213> Arabidopsis thaliana

<220>

<221> misc_signal

<222> (1)..(12)

<223> CE3 element at 381-369 bp

<400> 1

aaatattccc tc

12

<210> 2

<211> 12

<212> DNA

<213> Artificial sequence

<220>

<221> misc_signal

<222> (1)..(12)

<223> consensus sequence

<400> 2

tcgcatgtgac tc

12

<210> 3

<211> 28

<212> DNA

<213> Artificial sequence

<220>

<221> primer

<222> 1..12

<223> A-gpFW

<400> 3
ctagtagatt ggttggtgg tttaa

25

<210> 4
<211> 27
<212> DNA
<213> Artificial sequence

<220>
<221> primer
<222> (1)..(27)
<223> AproRV

<400> 4
tgtttgttt gtgtoggaaa ataattg

27

<210> 5
<211> 27
<212> DNA
<213> Artificial sequence

<220>
<221> primer
<222> (1)..(27)
<223> AP1

<400> 5
ggatctaatt aagactcaat atagggc

27

<210> 6
<211> 25
<212> DNA
<213> Artificial sequence

<220>
<221> primer
<222> (1)..(25)
<223> Bmwalk1

<400> 6
aaagatgga gagatggtta tgaggt

25

<210> 7
<211> 14
<212> DNA
<213> Artificial sequence

<220>

<221> primer
<222> (1)..(13)
<223> AP2

<400> 7
ctataggggt cgagcggc

13

<210> 8
<211> 25
<212> DNA
<213> Artificial sequence

<220>
<221> primer
<222> (1)..(25)
<223> Enwalk2

<400> 8
cggaaagaag caaagggtga aaagg

25

<210> 9
<211> 24
<212> DNA
<213> Artificial sequence

<220>
<221> primer
<222> (1)..(24)
<223> Lawalk1

<400> 9
tategtttgt ggtaagaaga gaga

24

<210> 10
<211> 24
<212> DNA
<213> Artificial sequence

<220>
<221> primer
<222> (1)..(24)
<223> Lawalk2

<400> 10
ttaaattggga agaaaagag gttg

24

<210> 11
<211> 25
<212> DNA

<213> Artificial sequence

<220>

<221> primer

<222> (1)..(25)

<223> BnproFW

<400> 11

ctgacttcac caaagaaaca actcg

25

<210> 12

<211> 26

<212> DNA

<213> Artificial sequence

<220>

<221> primer

<222> (1)..(26)

<223> BnproRV

<400> 12

cggaattcgg tttttttttt taggag

26

<210> 13

<211> 23

<212> DNA

<213> Artificial sequence

<220>

<221> primer

<222> (1)..(23)

<223> LaproFW

<400> 13

cagcttaacc ggtaaaattc gcc

23

<210> 14

<211> 23

<212> DNA

<213> Artificial sequence

<220>

<221> primer

<222> (1)..(23)

<223> LaproRV

<400> 14

ttttcagttt tcttcaggat aat

23

<210> 15
 <211> 393
 <212> DNA
 <213> Artificial sequence

<220>
 <221> promoter
 <222> (1)..(393)
 <223> transcriptional regulatory region

<400> 15
 agatctaaga acacacattc cctcaaattt taatgcacat gtaatcatag tttagcacaa 60
 tccaaaaata atgtagtatt aaagacagaa attgttagac ttttttttgg cgtaaaagga 120
 agactaagtt tatacgtaca ttttatttta agtggaaaac cgaaattttc catcgaaata 180
 tatgaattta gtatatatat ttctgcaatg taactatttg ctatttttggc aactttcagt 240
 ggactactac tttattacaa tgtgtatgga tgcattgagtt tgagtataca catgtctaaa 300
 tgcattgcttt gcaaaaacgtc accgaaccaca aaagaggatc catgcaata catctcatag 360
 ctctctccat tattttccga cacaacacaga gca 393

<210> 16
 <211> 900
 <212> DNA
 <213> Artificial sequence

<220>
 <221> promoter
 <222> (1)..(900)
 <223> transcriptional regulatory region

<400> 16
 aaggcttacc ctattagtgg aaagttgaaa ctttgttccc tactcaattc ctagtgtgtg 60
 aaatgtatgt atatgtaatg cgtataaaaac gtagtactta aatgactagc agtgggttct 120
 gagacagatg agagatggga gcagactcaa agatgatgac ataatcaaga accaatttga 180
 aaggcttcca ggtttgaatt ctattcgaga atgttttgc caaagatagt gggcatcttg 240
 aaccacagaa aaattttaa aaatcagtat caggttaagt tcatcaaat annagtgt 300
 ctatgatctg atgttaatt tagactaaa gactctctta agattcattc ctgtgtggt 360
 cttaaaattc aaatttata tttagaata ctatgctta attaaattc caatcaatct 420
 ttaattatc taaatagat attgttaatt aaatcaattc agagaata ctatgatct 480
 ctatattc agagatgat tctatcgtc tctaaataa caatctctt ctatatttca 540

ggacacatgta atcatagttt agcacaattt aaaaataatg tagtattaaa gacagaaatt	600
tgtagacttt tttttgggtt taauaggaa gtaagtttat acgtacattt tattttaagt	660
ggaaaaacga aattttccat cgaaatatat gaatttagta tatatatttt tgcattgtac	720
tattttgcta ttttggcaac tttcagtgga ctactacttt attacaatgt gtagggatgc	780
atgagtttga gtatcacat gtctaaatgc atgotttgc aacgttaacg gaccacaaaa	840
gaggatccat gcaaatatat ctcatagttt cttccattat tttccgacac aaacagagca	900

<210> 17
 <211> 1588
 <212> DNA
 <213> Artificial sequence

<220>
 <221> promoter
 <222> (1)..(1588)
 <223> transcriptional regulatory region

<400> 17	
ctgaattcac caaagaaaca actcagatcg ttatccatct cctcataacc atcgctccac	60
cctttgcctt caccgttttt ggttcgggtt ctacatcgc aacccggccc aaaccggttt	120
acctcgltga gtaactatgc taacctccac caacgcattg tagatcaagt atctccaagg	180
tcattgatat cttttatcaa gtaagaaaag ctgatcttct tgggaacggc acgtcgcatg	240
actcgctcgt gcttgacttc ttgaggaaga ttcaagaacg ttcaggtcta ggcatgaaa	300
ctcaccgggc cgaggggctg cttcaggttc ctcccggaa gaattttgog gggcgcgctg	360
aaagaaacga gcaagttatc attggtgogo tagaaaatct attcaagaac accaaagttt	420
acccaaaga tatagttata ctgtggtga actcaagcat gtttaattca actccatcgc	480
tctccggcat ggtcgttaac actttcaagc tccgaagcaa cgttaagaagc ttttaacctg	540
gtgycatggg ttgtagtgcg ggcgttatag acattgatct agcaagggac ttgttgatg	600
tccataaaaa taagtaatgt ctgtgggtga gacagagaa catcaattat aacatttaag	660
ctggcgataa tagttccatg atggtttcaa attgcttctt acgtgttctt gggacgata	720
tattttcttc caaaagctct aaatattcga gacgttcaa gtaagatga gttaacagg	780
tttgaaacg taagaaactt gacaaagt ctttaagtgt cgtgaaacg ggaacattt	840
agaaagttta atctttttt attttttt agaaataac agatattttt gttgaaagg	900
taaaataaaa cataaaagg ttggtttt ttgttttt gtaaaagaa aaatttttt	960

tttttgttac	cttcattggg	aagaaacttt	ttaaagataa	aatcaaat	tactacgtcc	1020
eggatttcba	acttgctatt	gaccattttt	gtatacatgc	eggaggcaga	gocgtgattg	1080
atgtgttaga	gaagaacota	gocctagcaa	cgatcgatgt	agaggcacca	agatcaacgt	1140
tacatagatt	tgaaaacaot	tcattotagot	caatatggta	tgagtgggca	tacatagaag	1200
caaaaggaag	gatgaagaaa	ggtaataaag	tttggagat	tgctttaggg	tcaggcttta	1260
agtgtaacag	tgcagtttgg	gtggctctaa	acaatgtcaa	agcttcgaca	aatagtcott	1320
gggaacaactg	catcgacaga	taccgggtca	aaattgatcc	tgattcaggt	aagtcagaga	1380
ctcgtgtcca	aaaagggtcg	tctaataaaa	cgatgtttgc	tctcttcgt	ttctttttat	1440
ttgttataat	aatttgatgg	ctaogatggt	tctcttggtt	gttatgaata	aagaatgcaa	1500
tgggtgtctc	gtatttgatt	gttttacatg	tatgtatctc	ttatttacat	gaaattttta	1560
aaagctctaaa	aaaaaaaaacg	gaattccg				1588

<210> 18
 <211> 1069
 <212> DNA
 <213> Artificial sequence

<220>
 <221> promoter
 <222> (1)..(1069)
 <223> transcriptional regulatory region

<400> 18	
cagcttaaac	ggtaaaattg gctgtacat atatttacca ctgagtaaag acatcagtta 60
atgatttggt	gttaactcaat tgggttaagt gtattattat atgtgttgta tataatgaag 120
gtaguaogta	aatttactaa gaatgtgttt ttaaatgttg attgatcttt ggcctcttag 180
gittgaatcc	tactcgagaa gactaattct aatttacttg caaaaataga aatcaattta 240
taagtgttta	aacaaatoga tggataaact gattagtgtt cactcttagg ttctgatcca 300
actcgagtaa	tgagtattga acgttttttt taataaaaaa ctgatttttt aaatttgatt 360
tttgagttaa	aaagttctta atattttctc ttgtttctaa tgggtttagt ttgcatttta 420
taagttaatt	tttttcaatt taatatttta tttacattcg tccgttaagt ttattttggt 480
atcaattctt	tttaattttt taattattaa ttcttggaat gtttgatcca aggtatcttt 540
gacaaaatg	tttttttttt tttttttaa tttaagactt acatcaattt tagtcagaga 600
ctagtgagat	tcaatcaatt caatgttaaa aaatattttt tttaagata taattttgtt 660

atttaattatt cggatcagta ttcttaata agaataataa acnaattcaa tagttabaga	720
taaaaaactta tatagacttt tttatttggg atataaaaagt atnaatatat tatagacaat	780
atttataaag ttaaaaaatc aatattttata ttttttatat atttatttca aattgaaaag	840
cattactttt atcgaaatga attttagtat attaattaat atttttttaa tgggactact	900
ttctattttt ggcacotttc atctgactac taattttatt caatgtgtat goatgcata	960
goatgagtaa tacacatgtc tatataaatg catgtaaaaa gtaacggacc acaaaaagtg	1020
atccatacaa atacatctca tggcaccttc tccgacacaa aactgaaca	1069

<210> 19
 <211> 972
 <212> DNA
 <213> Arabidopsis thaliana;

<220>
 <221> promoter
 <222> (1)..(972)
 <223> FAE1 promoter

<400> 19	
actcataaaa actagtagat tgggttgggtt gtttccatgt accagaaggg ttacattatt	60
agttgaaaagt tgaacatttg ttccctactc aattccatgt tctgtaaaatg tatgnatatg	120
taatgggtat aaaacgtagt acttaaatga ctaggagtgg tcttgagac cyatgagaga	180
tgggagcaga actaaagatg atgacataat taagaacgaa ttgaaaaggg tottaggttt	240
gaatccattt cgagaatggt ttgtcacaag atagtggcga tttgaacca aagaaaaaat	300
ttaaaaaatc agtatccgtt tacgttcatg caaatagaaa gtgttctagg atctgattgt	360
aattttagac ttaagaggtc tottaagatt caatcttggc tctgtacaaa actacaaata	420
atatatttta gactatttgg tottaactaa acttccactc attatttact gaggttagag	480
aatagaattg cgaataaaca cattcccgag aaatctcat gttccatata ttagtcagag	540
gttatgccaa taagatctaa gacacacat tccctcaaat tttaatgac atgtaactat	600
agtttagaac aattcaaaaa taatgtagta ttaaaagaa aatttttag attttttt	660
gggttaaaag gaagacaaat ttatcagta cattttatt taattgaaa accgaatttt	720
ttatcctaaa tatatgaatt tagtatatat atttatgaa ttttttatt ttttatctta	780
ttatcttcaa ttgtttact attttattac aatgtatata gatattgag ttatattata	840
ttatgttata aatgtatttt ttgttaaaat taattgaaa aaaaatgaa ttatgtttta	900

tacatctcat agcttctctcc attattttcc gacacaaaca gagcaatgac gtcctgttaac 960
gttaagctac tt 972

<210> 20
<211> 1790
<212> DNA
<213> Brassica napus;

<220>
<221> promoter
<222> (1,..(1790)
<223> FAE1 promoter

<400> 20
gggtggggcaa atctgaactc accaaagaaa caactcgagt cgttatccat ctctccataa 60
ccatcgctcc actctttgcc ttcaacgttt tgggttcgggt totctacato gaaacccggc 120
ccaaacccggt ttacctcggtt gactactcat gctaccttcc accaacgcat tgtagatcaa 180
gtatctccaa ggctcatggat atcttttato aagtaagaaa agctgacccct totcggaacg 240
gcaagtggga tgaactcgctg tggcttgact tottgaggaa gattcaagaa cgttcaggtc 300
taggggatga aactcaaggg ccgagggggc tgcttcaggt cctcccccgg aagatctttg 360
cggcgggcgcg tgaagagacg gagcaagtta ctattgggtg cctagaaaaa ctattcaaga 420
acaccaaagc taacctataa gatataggta taattgtggt gaactcaagc atgttcaatc 480
caactccatc gctctccggc atggctgcta acaatttcaa gctccgaagc aacgtaagaa 540
gctttaaact tggtagcatg gggtgtagtg ccggcgctat agccattgat ctagcaaaag 600
actgtttgca tctccataaa aatacgtatg ctcttggtgt gagcaagagc aaatccactt 660
ataacattta cgttggtagt aataggtcca tcatggcttc aaattgcttg ttccgtgctg 720
gtggggccgc tatttttgctc tccaaacaagc ctggagatcg tagacggtcc aagtaagagc 780
taattccacc ggttcgaact ctatccggag ctgacgacaa gtcctttcgt tgggtgaaac 840
aaggagacaa tgggaacggc aaatccgag tgggtttgtc caaggacata accgagcttg 900
ctgttcgaac ggttaacaaa aacataacaa cgttgggtcc gtttattctt cgttcaagac 960
aaaattctc atttttcgtt accctcattg gaaagaaact attcaaaat aaatccaaac 1020
attcaaacg cctggatttc aaattctatc ttctctattt ctctatcact gctccagggc 1080
gctctctat tctgggga ccaaaacac taactctatc aatgactat gtagagggat 1140
tctatgaac attacataga attgaacaa gttatctag ctcaatctg tatgtgtg 1200

cacaacataga agcaaaaagga aggatgaaga aaggtaataa agtttggcag attggtttag 1260
 ggtcagggtt taagtgtaac agtgacgttt ggggtgggtct aaacaatgto aaaggttoga 1320
 caaatagctc ttgggaacac tgcacagaca gataccgggt caaaattgat tctgattcag 1380
 gtaagtcaga gactcgigtg caaaaagggt ggtcctaata aacgatgttt gctctctttc 1440
 gttctctctt atttgttata ataatttgat ggctacgatg tttctcttgt ttgttatgaa 1500
 taaagaatgc aatgggtgtt tagtatttga ttgttttaca tgtatgtatc tcttattcac 1560
 atgaaatttt taaaaggcta aaaaaaaaaa aggaattcag atgacgtaca ttaacgtaaa 1620
 gctcttttac cattaagtta taaccaacct ttccaacct tgcctctttc agtcaacggc 1680
 gatcgtcgcc ggaaaaggct atcggtttac catagacgat cttcaccact tatactatto 1740
 ctatctccaa cacaacctca taacctctgc tcaactcttt gcttccacgc 1790

<210> 21
 <211> 1210
 <212> DNA
 <213> Lunaria annua;

<220>
 <221> promoter
 <222> (1)..(1210)
 <223> FAH1 promoter

<400> 21
 cggcggggag ttccagetta accggtaaaa ttggcctgta catatattta ccactgagta 60
 aagacatcag ttaatgattt gttgttactc aattgggcta agtgtattat tatatgtgtc 120
 gtatataata aaggtagaac gtaaatttac taagaatgtg ttttccaat gtagctcttc 180
 tctggcctct taggtttgaa tctactcga gaagactaat ttaatttac tggcaaaaat 240
 agaaatcaat ttataagtgt ttaaaccaat cgatgggtata actgattagt gatcactctt 300
 aggttttgat ccaactcga ccttgagtat tgaacgtctt ccttataata aatcttattt 360
 tttaaaatgg tttcttgagt aaaaaagctc ttaattctt ctcttggttt taatgggttt 420
 gttctgcatc ttataagctt aattctctta atttattatt ttatctatca tcttctctta 480
 atttttattt ggaacaaact tgttttattt ttctaccta taatttttga attttttat 540
 ttaatttata cgttttaatt atttttata tttttttta atttttata ctcttttat 600
 attttttat attttttga gattttata atttttata attttttaatt ttttttaatt 660
 attttttat atttttat atttttata atttttata attttttaatt attttttaatt 720

caatagttac agataaaaaa ttatatagac ttttttattt ggaatataaa agtatbaata	780
tattatagac aatatttata acgttaaaaa tacaatatit atatttttta tatatttatt	840
tcaaattgaa aagcattact totatogaaa tgaatttttag tatattaatt aatatttttt	900
taatcgggact aattttctat ttctggcact ttcatctgac tactaattta ttbaatgtg	960
tatgcattga tgcacatgag taatacacat gtctatataa atgcattgaa aacgttaacgg	1020
accacaaaag tggatcata caaatacato tcctcgacac ctctcggaca caaaactgaa	1080
caatgaagtc tctgaaagta aaactccttt accattactt cataacaaac tttttbaacc	1140
tctgtttctt accactgacg gggatctctg ccggaaaagg ctctcgtctt accacaaaag	1200
atctcacaac	1210

<210> 22
 <211> 1141
 <212> DNA
 <213> Artificial sequence

 <220>
 <221> promoter
 <222> (1)..(1141)
 <223> consensus sequence of A.t., L.a., and B.n. FAE1 promoters

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nmmsksrkwt	60
warmyckyrw wynksrwwk gwykkkwybc anntsbyrha rrwkdmtay bmtmknkgk	120
tgwrhrywrw rambdtvdhh yvtamnnawt tmcmmdkddk rtrwwwkknn natgwdddk	180
yhmwnnngob tvtwrvrykt drdwsbkrrn ygmbwwknws ydvtyywww dlmekrkerr	240
wvtrrgrrnn ymvawbtahr rrynnqwtba mayrrwtmnn nnnnakamok rakywgwara	300
brnstcttwk skttkurtsc wanncragda nkdhkwwkws aamgyvwonn nnnnwtkyka	360
rboarwdwww hawkkkwhan aahysrkkt bykrktmynn nggttmwkm wawywkdmd	420
wbstyunnnn ggrtyyywtk nkkmwtyykw kannakwraw dhktcthnnt twwkmtkywn	480
nywksmnd kshrbaaavy twymwwrry ahannnwdy wwkaactwyky kwskwenny	540
awtyksswn ytryyrykt nnsrwrsdt nsmrannya rabnyrykn trwbwsttw	600
bbbradaahy wbrwybake kmkawykk kyangisan nnnnnnnnnn nnnnatard	660
gyaasrwa mankwytyk kaannyyt nnnwawwn atkrmtwk nnnnnnaw	720
nnnnnnnkn warknyaa arkakknw wnkwmrpy krlahatd krongyky	780

tttannntyr gvvintaard gwannnnnnn nnnnnnnys dmwvtwwaya nygtannnnn	840
nnnnayaww nkwytttdir wrbaytannn nrmayyygay addyayymsd todawmkwda	900
tkmnnattyn rgtawstann nnnmtmkiky ybhaawnnnn ngkmtaht wwvckatkt	960
kgwmmottt orkyknnstw ywmotttrtt wyaatrkwkt natgsmtrcn atgwknnyw	1020
tgwkttrwtay rmatrwmkaw wvmatgswn tnsyarwayk traykgwyyn acawrwrwgk	1080
atcymtdnaw wtacatswma thkynwhmok ennnnnnnnt mmramamaaa ncdgarywnn	1140
n	1141

<210> 23
 <211> 1055
 <212> DNA
 <213> Artificial sequence

<220>
 <221> promoter
 <222> (1)..(1055)
 <223> consensus sequence of A.t. and L.a. FAE1 promoters

<400> 23	
actakwaaa rmyakyagwt nntgrttkgt tgktwyycan ntqkrcyarr wjkmttayym	60
natkwyttgw awrtwrwaam ktkrkwmst amnnawttmo tarkwrtgtr wwtknannat	120
grwwtgywm tnnngestmt warryktrrw wcytanwyda swagnastrr titylwrwkw	180
ckrkssarara trgrarymra wytawarrtg wtkamayaaw tmnnnnnnak aackrattwg	240
wraksnottt taggtttkra tccwaytoga qwatkkwktw ktsaamgmtw nnnnnnttt	300
tkaamyaaaar wwwwsatttw waaawtsrkt wtyygrktam nnnnjjtowl rmwawtwkmw	360
nktlgyttwn nnjgrtytgw ttkkmatttt ikannattaa wkwtctmnn ttaakattyw	420
atcywksmtn gtsyryaaaar ytwyawwtrr yayannnnnk ttwkactwti ykrcottann	480
taawytksa notarttrwk tcnwnagskt asmdrayara ywt pykwnta waywewtwyy	540
yragaawtam ymmisatcyc ataattagt a jaggstakg nnnnnnnnn caatcarwke	600
taasaabama natlcyctya annatytwan natdownatk taatrwtann nnnagtwtm	660
nnnnkmas atwyaaaamt aatkyartan ttamaayar aayttttan ngacttttt	720
nnnjjmrtk taarjwann nnnnnnnnn nnsawwrtt tntannann nnnnnnnay	780
atctnattt cwwrtkann nnnnnnagay ygaawknr taww tkaww kwar nnt	840
tnajrtktn nnnnatatt tykyaatng kactayttts atatttga wntttwky	900

kyactactam tttattwcaa tttttatysa tgcattgagyw tgaattantac acatgctaw	960
airmatgwt ngyaaaaagt aacggaccac aaaagwggat ccatrcaaat acatctcatm	1020
gowyctonn nnnnnntccg acacaaaaw garca	1085